

WHAT IS CLAIMED IS:

1. A multiple cavity injection molding system comprising:
at least two single cavity injection molds for forming objects, each single cavity injection mold having a first mating portion and a second mating portion which are movable between a closed position in which a mold cavity is formed and an open position in which the object is removed from the mold cavity;
a resin delivery system operatively coupled to the first mating portion of each of the at least two single cavity injection molds for delivering resin into each of the two single cavity injection molds; and
an ejector system operatively coupled to the second mating portion of the at least two single cavity injection molds for ejecting the object from the mold cavity.
2. The multiple cavity injection molding system of claim 1, wherein the objects formed in the at least two single cavity molds are optical discs.
3. The multiple cavity injection molding system of claim 1, wherein the injection molds are separated from each other by a material having low thermal conductivity.
4. The multiple cavity injection molding system of claim 3, wherein the material having low thermal conductivity is air.
5. The multiple cavity injection molding system of claim 3, wherein the material having low thermal conductivity is a ceramic.
6. The multiple cavity injection molding system of claim 1, wherein a coolant is circulated between the injection molds.
7. The multiple cavity injection molding system of claim 6, wherein the coolant is a gas.

8. The multiple cavity injection molding system of claim 7, wherein the gas is air.
9. The multiple cavity injection molding system of claim 6, wherein the coolant is a liquid.
10. The multiple cavity injection molding system of claim 1, wherein the mating portions of each of the at least two injection molds independently center themselves upon moving to the closed position.
11. The multiple cavity injection molding system of claim 1, wherein the resin delivery system delivers resin into each of the at least two injection molds in a manner duplicative of a single cavity injection mold resin delivery system.
12. The multiple cavity injection molding system of claim 1, wherein the resin delivery system includes a hot runner manifold, and wherein the termination of the hot runner manifold is spaced from a parting line of the injection molds.
13. The multiple cavity injection molding system of claim 1, wherein the first mating portion of each single cavity injection mold is resiliently coupled to the resin delivery system.
14. The multiple cavity injection molding system of claim 13, wherein Belleville washers are used to resiliently couple the first mating portion to the resin delivery system.
15. The multiple cavity injection molding system of claim 1, wherein the second mating portion of each single cavity injection mold is resiliently coupled to the ejector system.

16. The multiple cavity injection molding system of claim 15, wherein Belleville washers are used to resiliently couple the second mating portion to the ejector system.
17. A multiple cavity injection molding system comprising:
a resin injection mechanism;
an ejector mechanism;
a first mold for forming an optical disc, a cavity side of the first mold movably coupled to the resin injection mechanism and a mating core side of the first mold resiliently coupled to the ejector mechanism;
a second mold for forming an optical disc, a cavity side of the second mold movably coupled to the resin injection mechanism and a mating core side of the second mold resiliently coupled to the ejector mechanism; and
wherein the cavity sides and core sides of the first and second molds are all capable of moving independently from each other.
18. The multiple cavity injection molding system of claim 17, wherein the first mold and the second mold are separated by an insulative material.
19. The multiple cavity injection molding system of claim 18, wherein the insulative material is air
20. The multiple cavity injection molding system of claim 17, wherein the first mold and the second mold are single cavity molds.